International Multidisciplinary Scientific GeoConference Surveying Geology and Mining Ecology Management, SGEM 2017 vol.17 N14, pages 981-987

# Transformation oil soluble catalysts based on transition metals (Co, Fe) under aquathermolysis

Feoktistov D., Lotfullin B., Mikhailova A., Vakhin A., Kayukova G.
*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

## Abstract

© SGEM 2017. All Rights Reserved. As a promising alternative to thermal steam treatment of oil-saturated reservoir technology to intensify the extraction of heavy oil catalytic aquathermolysis process can be identified. This paper presents the results of research of the active form oil soluble catalysts based on metals Co (II) and Fe (II), formed in the process of the laboratory simulation of catalytic aquathermolysis heavy crude oil, and its influence on the composition of the oil itself. Experimental data shows a decrease in viscosity catalytic aquathermolysis products. According to the hydrocarbon type content analysis (SARA) and IR spectroscopy a significant reduction of high-molecular structures of oil by catalytic thermal destruction was revealed. The composition of the active form of the catalyst powder was analyzed by X-ray diffraction method. It was shown, that the oil soluble complex based on Co is converted to the sulfide form, the complex based on Fe - to the oxide. According to the results of SEM measurements of the catalyst, the particle size is within 60 nm.

http://dx.doi.org/10.5593/sgem2017/14/S06.092

## Keywords

Catalytic aquathermolysis, Heave crude oil, X-ray diffraction method

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